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12-1991

## ACUTA eNews December 1991, Vol. 20, No. 12

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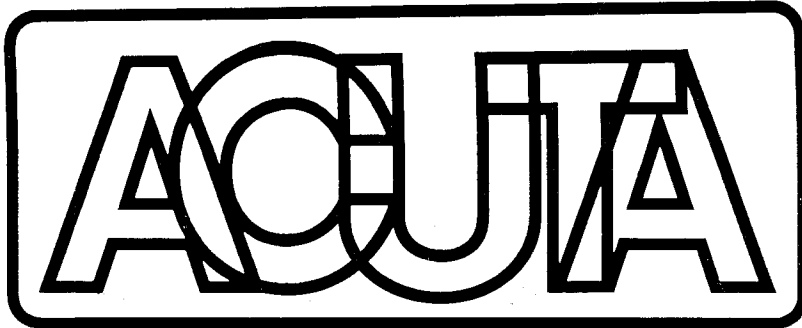


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# NEWS

**Association of College & University Telecommunications Administrators**

THE VOICE OF TELECOMMUNICATIONS IN HIGHER EDUCATION

DECEMBER 1991

## ACUTA InfoLine is at your fingertips

Want information about an upcoming event, or want to refer a prospective member or affiliate to some general information about the Association? How can one of your vendors find out about exhibiting or sponsoring an event at a future ACUTA meeting? When is next year's Fall Seminar and where will it be?

Just dial the ACUTA InfoLine - (214) 994-9024 - for the answer of any of these questions.

The InfoLine, a new service to members as well as the general public, employs VMX equipment

*(Please turn to page 7)*

## ACUTA membership contest offers many rewards and prizes

One of ACUTA's main goals is to allow you to exchange ideas and information with fellow members. That means a strong and active membership is essential to ACUTA's mission.

"The rewards of a healthy and vibrant membership are many," said 1991-92 ACUTA Membership Director Stephen Carnilla, "and for this membership drive, we are offering some very *tangible* rewards in addition to the benefits that come from having new members join our association." These rewards "are designed to

*(Please turn to page 6)*

## Presentations, panels set for Tucson

An overview of the distance learning technologies that universities, colleges and public schools in Arizona employ to meet the educational needs of specific student populations cost-effectively, will be presented during ACUTA's Distance Learning Seminar in Tucson by Elizabeth Craft, Director of Distance Learning for the state.

Two panel discussions by vendor representatives - "Meeting

the Challenges of Future Technology" and "Advanced Campus Technology" - also have been added to the Jan. 8-11 seminar. AT&T, Compression Laboratories and US Sprint will participate in the first panel, while GTE, Southwestern Bell and US West will make up the other. United Telecom will also make a presentation of its "University of Excellence."

*(Please turn to page 7)*

## ACUTA MEMBERSHIP RECRUITMENT CONTEST

### QUALIFICATIONS

1. The contest will be held from December 1, 1991 through June 1, 1992.
2. Any college or university primary representative or associate member is eligible to participate in the contest.
3. Corporate affiliates (representatives and designated employees) are eligible to participate in the contest for special recognition in the ACUTA NEWS but are not eligible for prizes.
4. For every new institution, individual, or company joining ACUTA, the recruiting member will be credited points based on the following scale:
  - 5 points for each new institutional member\*
  - 2 points for each new associate member\*
  - 2 points for each new corporate affiliate
  - 2 points each for new members who attend the Tucson Winter Seminar
  - 2 points each for new members who attend the Lexington Spring Seminar
  - 2 points each for new members who attend the San Francisco Conference & Exposition (New members must register and pay fees by June 26, 1992.)
- \* If necessary, refer to page 10 of the 1991/1992 ACUTA Membership Directory for the difference between an institutional member and an associate member.
5. Applications must be received by the ACUTA office from potential new members between December 1, 1991 and June 1, 1992. Payment of dues must be received by the ACUTA office by June 26, 1992 in order for points to be credited to participants.
6. You need not attend ACUTA's annual conference to win any of the prizes.
7. This offer does not apply to membership renewals. For this contest, a membership renewal is considered a member who has not renewed their membership from the 1990/1991 membership year.
8. Only one recruiter may receive points for a new member.
9. Only one prize will be given per person. In the event of a tie, a chance drawing will decide the winner.
10. Prizes will be awarded as follows:

*(Please continue on page 6)*

# Toll fraud exceeding \$2,000 monthly attributed to 10-XXX

To comply with recent FCC rulings, Illinois State University programmed its new 8,000-line digital telephone switch - cutover on July 27 - for 10-XXX access calls. Steps were taken to block access to 10-XXX+1, and call screening was established with the local telephone company, explains Bill Blomgren, Director of Telecommunications.

Prior to July 27, faculty, staff, and students enjoyed free access to both MCI and US Sprint using 800 access numbers, but access to AT&T via 10-288 was not possible.

"When only 800 access was in use, toll fraud and unidentified

calls were not a problem," reports Blomgren. "With the activation of 10-XXX access, however, the university has experienced literally thousands of dollars in fraudulent and untraceable calls each month."

During the first two months that 10-XXX was in use, the University averaged \$2,000 per month in uncollectable calls directly related to 10-288 usage, according to Blomgren. In the first month of operation, \$1,400 worth of unidentified - and unpaid - calls were made to India using 10-288 access. These calls were billed directly to university trunk num-

bers with no apparent operator intervention.

"Even though we had requested call screening, this screening has proven to be ineffective on many international calls and on numerous domestic calls," he adds.

"We have not yet received our October bill from AT&T, but we have no reason to assume that our problems with 10-288 access will in any way improve. Illinois State University's experience with 10-XXX access has been anything but positive. The potential for fraud has proven to be high and the time we must spend to determine how these calls are being made and by whom is excessive."

ACUTA Executive Director Del Combs, President Paula Loendorf and Legislative/Regulatory Affairs Committee Chair Randy Collett cited this report from Illinois State in conversations with the staff of Rep. Ed Markey (D-MA) while they were in Washington, DC, Nov. 20 continuing ACUTA's efforts to have colleges and universities exempted from the 10-XXX access provisions of the Operator Services Act.

Rep. Markey is chair of the House Commerce Committee through which telecommunications law must pass before it reaches the House floor. ♪

## Univ. of Delaware changing prefixes with switch cutover

On January 18, the University of Delaware will cutover its 8,500 telephone lines from five old exchanges to two new ones reserved for the exclusive use of the university.

Faculty/staff offices in the 451, 453 and 292 exchanges will be moved to the 831 (UD1) exchange, and the residence hall telephones will be moved from the 731 and 737 exchanges to the 837 (UDS) exchange. In all cases, the last four digits of the number remain the same, reports Donna Borden

of the university's Telephone Services.

The university will be shifting from an AT&T 1A ESS, central office switch, to a Northern Telecom DMS-100 system.

"The university will continue to be a Centrex customer of Diamond State Telephone, a Bell Atlantic company," Borden added. "But this change will give us room to expand and allow us to take advantage of many features more commonly available in a digital switch environment." ♪

## Association of College and University Telecommunications Administrators - ACUTA NEWS, Volume 20, No. 12

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## Four ASU basketball players disciplined for phone abuse

Four members of the Arizona State University basketball team have been disciplined for "unauthorized use of campus telephones," according to an Associated Press report.

Two players will sit out three games during the coming season, while one will miss four games and another will miss six.

The AP report did not disclose the nature of the violations.

The National Collegiate Athletic Association has approved the disciplinary moves and will not penalize the ASU sports program, Athletic Director Charles Harris said, Nov. 13. ♪

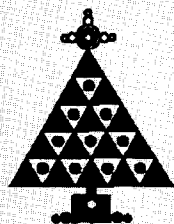


## MESSAGE FROM THE PRESIDENT

Paula Loendorf,  
University of  
North Dakota

I have a major decision by the Board of Directors to announce to you this month. After considering, for the last eight months, the need for a new staff position in the ACUTA headquarters, the Board has approved the new staff position of Telecommunications Resources Manager.

Although funds for the position were included in the 1991-92 budget (printed in the October ACUTA NEWS), advertising and filling the position were postponed until a thorough needs evaluation was completed. The process started when Executive Director Del Combs requested the new position more than a year ago.



## Happy Holidays!

The ACUTA Board of Directors and office staff wish Seasons Greetings to everyone! Please drive carefully, don't eat too much and be sure to meet us in Tucson on Jan. 8 for the ACUTA Winter Seminars.

After thorough deliberation, the Board agreed that the office could use an additional staff member to improve ACUTA member services.

The workload of ACUTA has been growing with several major undertakings for the newly created committees as well as event negotiations. For example, the efforts of the Regulatory and Legislative Affairs Committee with multiple trips to Washington D.C., countless phone calls and correspondence have been a time consuming endeavor.

In the three and a half years since we established the headquarters, many duties originally handled by volunteers have been assumed by staff members. Providing support for our three seminars, annual conference, workshops and publications in itself warranted additional staff.

When volunteers performed this work, responsibilities were often shared by three to five different institutions. Several staff members at each school handled various necessary tasks to assure a successful ACUTA event. In addition, it was sometimes necessary for the volunteer members to employ temporary staff to assist with peak work loads prior to each event.

The Board believes that consolidating the workload at the headquarters has improved the effectiveness of the association and recognizes the need for additional help with ACUTA's expanding commitments. An advertisement soliciting applicants for the new position can be found on the back page of this issue.

I might add that the Board has compared the number of staff members and headquarters responsibilities with similar organizations such as CAUSE, CUPA, APPA and AACRAO. Com-

parisons were made of the size of membership, number of events and mailings, publications, member services, and size of staff. The comparisons revealed that we have, indeed, been getting a bargain with the five staff members we employ to keep ACUTA functioning.

Duties of current staff members will change because of this new position and as they do, they will be reported in future newsletters.

Speaking of the Regulatory and Legislative Affairs Committee, ACUTA's efforts in appealing the classification of colleges and universities as aggregators and the requirement of 10-XXX access have certainly had their ups and downs. Thus far, ACUTA staff and Board members have made four trips to Washington to meet with FCC commissioners, Senate and House staff.

We have submitted, through our attorneys, multiple filings to the FCC to present ACUTA's position regarding the inclusion of colleges and universities in the aggregator definition and the unblocking of 10-XXX. We remain optimistic that ACUTA can influence the final outcome of these regulations. However, it is apparent that more work must be done to convince key congressional members to omit colleges and universities from the aggregator definition.

At the start of my message I informed you of the need for additional staff in the ACUTA office, and at the end I tell you there is more work to be done.

During the planning process this year, ACUTA needs to think carefully about its mission and member services to assure that we allocate our limited resources to where they will do the most good for our membership. ☺

# YaleNET offers range of services via three carriers

**By Jeff Euben**  
Yale University  
Northeast Region

A recent announcement by the vendor who will be providing Yale University's long distance services for the next four years referred to the system as "Yale's private toll-network, called YaleNET."

While most everyone does think of YaleNET as simply a toll network, I look at it as much more than that. YaleNET is a range of services including:

- Interstate, intrastate and international voice and data communications;
- Inbound termination services, operator services;
- Calling cards, collect-call billing, and
- 800 services and 900 billing.

With a few exceptions, these services are available to students, staff and faculty 24 hours a day, seven days a week. (Administration and faculty are blocked from completing 900 calls, and students are not offered Yale calling cards.)

The Telecommunications Department serves approximately 20,000 students, staff and faculty. We

manage two telephone systems and all of the related cable plant and distribution facilities. Yale's Central Campus - 170 buildings located in downtown New Haven - is served by a NEAX 2400 PBX cutover in 1986 with about 13,000 ports at present. The Yale-New Haven Medical Center - 39 buildings about six blocks to the south - is served by a Yale-owned SL-1 XT cutover in 1982 with about 9,600 ports installed today. Fiber optic facilities connect the two systems which share common long distance, inter-exchange carrier termination and operator services.

In the last year, Yale Telecommunications billed more than 19.5 million minutes of direct-dialed, domestic and international traffic as well as one million minutes of Yale calling-card and collect calls. AT&T, our inter-exchange operator services provider, billed about 2.5 million minutes. Local calls, which are not message-unit-based, are included in the cost of dial tone. These accounted for another 9 million minutes.

We have made a deliberate effort in recent years to maintain a multi-vendor environment. This

strategy has kept the competitive and creative juices flowing in the vendors' sales and support people. Most importantly it has provided route diversity and disaster avoidance. (Just ask the Federal Aviation Administration in New York City about the importance of route diversity.)

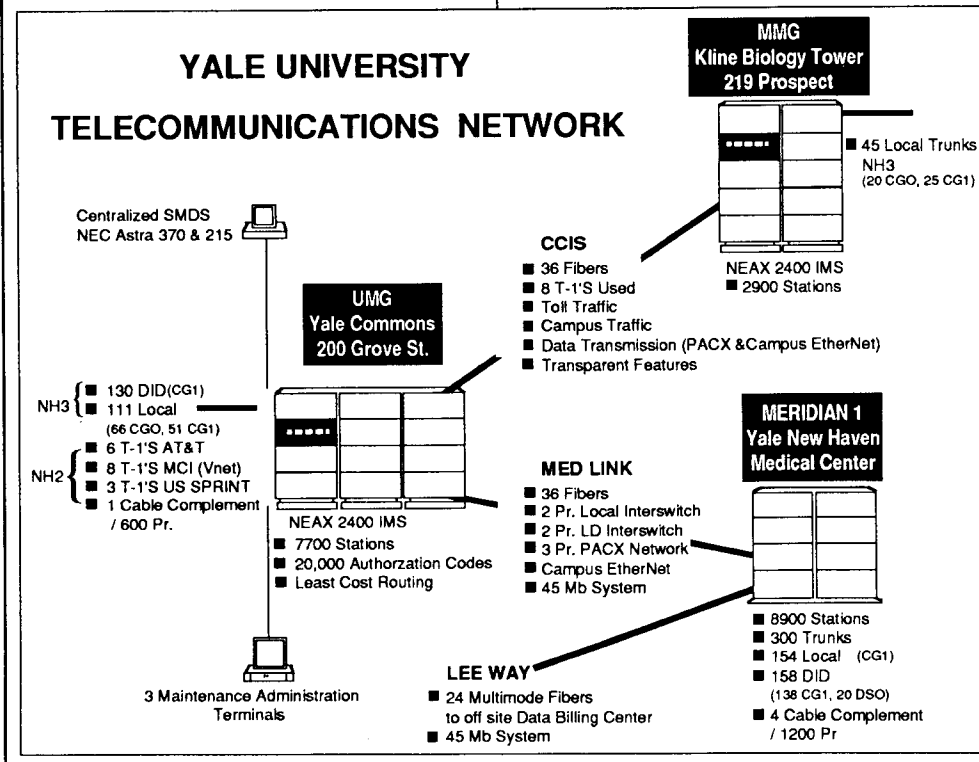
We solicit formal bids from all potential service providers. This forces us to review and document priorities and results in better-evaluated bid responses and informed decisions. The responses can then become the framework for written contracts.

The Yale University "Inter-exchange Services" diagram (below, left) details the infrastructure supporting all of our inter- and local exchange services.

• MCI is our primary domestic services provider. This past June, we signed a four-year agreement for Vnet services to replace a three-year Vnet Network Savings Plan (NSP) arrangement. The original NSP agreement was signed in April, 1990, at the conclusion of a bidding process. The new contract resulted from a re-evaluation of the intrastate portion of our network, coupled with some creative thinking by the Yale Telecommunications staff and the MCI account team. The university currently has six T-1s in place for access to the Vnet network. We also have issued MCI Vnet cards for use as Yale's primary business travel calling card. About 1,600 cards are in use today.

• US Sprint, our primary international services carrier, was selected in March, 1990, after evaluating all proposals to provide our inter-exchange network services. We have one T-1 in place for access to the Sprint VPN network.

• Sprint is also the Primary inter-exchange carrier (PIC) on all of the public and semi-public payphones located on Yale property. A three-year agreement was signed in August, 1989, after a request for proposals (RFP) had



been issued and responses evaluated.

- AT&T is our operator services provider (OSP). The current three-year agreement was signed in August, 1989, after competitive bids were reviewed. We have two T-1s in use today for access to AT&T's Operator Express service.

Additionally, we have terminating access service agreements with the three major carriers. Each connects from their local point of presence (POP) to our PBX network via LEC-provided T-1s. All switched traffic originating on each carrier's network destined for one of the Yale exchanges is carried on the T-1s and terminated by the Yale switching network. This way, carriers avoid having to pay the LEC's per-minute, terminating-access charge. And they share that savings with Yale. AT&T has four T-1 connections from the local POP, while MCI and Sprint each have two. This past year we terminated approximately 15.4 million minutes of traffic for the three carriers.

Over the nine years I have been at Yale, we have tried to keep our network services in a position to take full advantage of changes in technology, marketing strategies and regulations. We have moved from outdated WATS and FX services to more advanced virtual private network services. Analog systems have given way to digital technology and minimum duration billing has been replaced by answer supervision. And this evolution continues. We are currently moving from DS1 (copper) local access to DS3 (fiber) access. Not a single year has gone by without a hardware, software or service change on campus, and I expect similar progression in the future.

YaleNET billing and collection services are provided with the assistance of the university's Bursar and the Management Information Services (MIS) Department. All staff and faculty are required to use a toll authorization number (TAN) to complete toll calls. Residential service customers have the option of using TANs or leaving their telephone line

unrestricted (to allow long distance calls to be completed without a TAN).

Monthly billing information is presented to the University's MIS department from our ASTRA PHACS call-accounting tape, as well as two toll-billing tapes from our local exchange company, two from AT&T and two from MCI. The toll billing tapes are used to obtain information for billing calling card, collect and 900 calls. Administrative call detail and summary reports are printed and distributed to each department. General ledger transfers are posted electronically. Residential call detail statements are printed and mailed to each student's campus address. Summary billing information for each student is then forwarded electronically to the Bursar's billing system and posted to each student's current Bursar bill. The Telecommunications Department receives immediate credit for all student billing, and the Bursar takes responsibility for collection. Failure to pay the Bursar bill becomes a debt owed to the University and may prevent class registration or graduation.

As Paul Harvey would say, now the rest of the story . . . .

We do pay the Bursar and MIS for the services they provide, but it is well worth it. They have allowed us to concentrate on providing high quality telecommunications service and avoid becoming a billing and collection agency.

Managing your own network services and running your

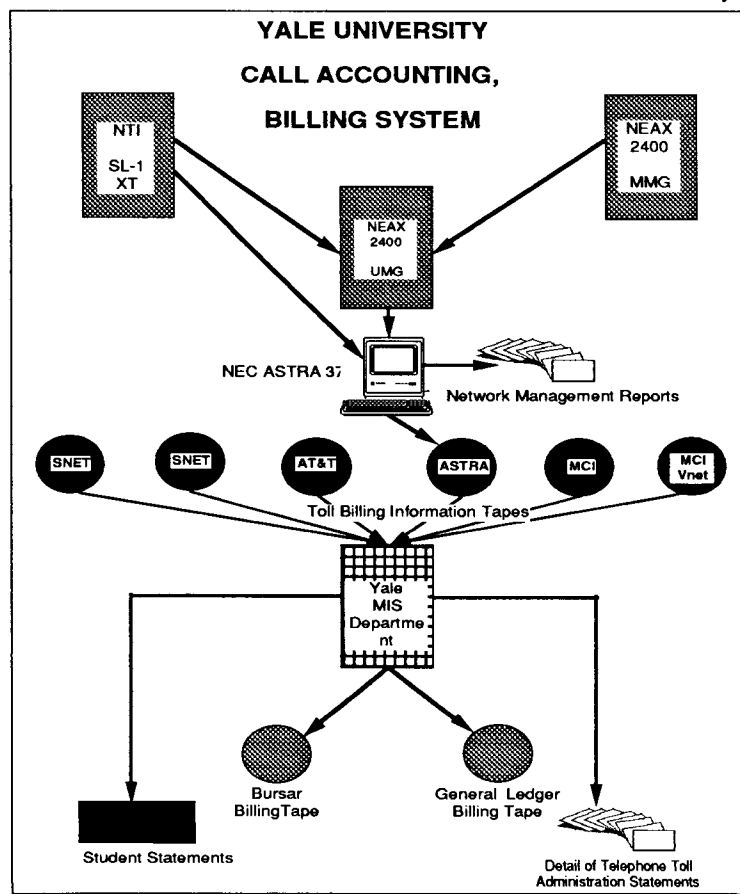
own resale operation present some real challenges as well as some great opportunities.

The challenges? Writing RFPs, negotiating contracts, preventing and investigating toll abuse, listening to aggregators (or is that aggravations?) who try to make you "the offer you can't possibly refuse."

The opportunities? A thank you from an international student who is used to waiting hours to make a long distance call, negotiating that extra 1/2% discount for the university, generating real revenues for your school, and not least important, providing services you and your staff can be proud of.

I am not going to say it is easy, but the rewards that you, your staff and your entire school will gain are well worth the time and effort. There will be many challenges, but through ACUTA you have the opportunity to learn from those of us who have traveled this route already. 📞

**(Jeff Euben is Manager of Network Services for the Yale University Telecommunications Department. He can be reached by telephone at (203) 432-7040, or via BITNET: JHEUBEN@YALEVM.)**



# Tennessee orders reduced rates for educational T-1 users

The Tennessee Public Service Commission (PSC) has directed South Central Bell to reduce T-1 rates by an average of 70 percent to make distance learning more affordable for educational institutions.

Citing previous tariffed rates for high capacity services that made distance learning applications "cost prohibitive," the PSC restricted the discount to classroom instruction conducted by institutions accredited by the Southern Association of Colleges and Secondary Schools.

After an experimental project in Gibson County proved that "two-way, live, interactive video in the classroom is an effective and economical means of teaching," the PSC commented that "educators are going to be able to put this technology to work only if it is affordable."

The trial also proved that "live video can be provided between multiple locations on today's T-1 - or copper-based - 1.5 megabit network."

Effective Nov. 1, tariffed rates for T-1 service are reduced to \$70 per local channel, \$53 per interoffice channel and \$11.50 per mile of interoffice mileage.

The new rates will reduce transmission costs of Gibson County's pilot project from \$4,626 monthly to \$1,240.

With the success of the Gibson County trial, the commission noted that it had received a number of inquiries about

educational video services from local school districts as well as several universities and colleges. Costs, however, were "overwhelming." The trial had been authorized by the PSC, because it recognizes that "emerging technologies are going to be especially useful in education."

Prior to the order, PSC staff had been working with the phone company to develop discounted rates for educational video transmitted on T-1s. While the order initially applies only to South Central Bell, the PSC directed its staff to study rates charged by other local operating companies to determine if they should be asked to mirror the educational discount now offered by South Central.

The commission also moved to request that the Federal Communications Commission grant an exception to educational institutions in considering codecs customer premise equipment. The upfront cost of having to purchase codecs also prevents many school districts from setting up distance learning systems. "If the FCC would allow the codec to be considered part of the network for educational users, we could work to make distance learning accessible and affordable for all schools," the commission said.

For more information about the Tennessee program, contact Jack McFadden, Director of Telecom Policy/Planning, C3-312 Cordell Hull Bldg., Nashville, TN 37243. ↗

## ACUTA MEMBERSHIP RECRUITMENT CONTEST

*(Continued from page 1)*

- Each participant's name will be submitted for a chance drawing. The more points a recruiter has, the more chances he/she has for the drawing. For example, a person who recruits one new institutional primary member (worth 5 points) would have their name entered 5 times for the drawings.
  - The first drawing from this pool of chances will be for a portable compact disc player (approximate value \$200).
  - The second drawing will be for a VCR (approximate value of \$300).
  - The third drawing will be for a stereo system (approximate value of \$500).
  - After these drawings, a separate drawing will take place for those who have accumulated a minimum of twenty-five (25) points. Each qualifying recruiter's name will be entered one time for a chance to win ACUTA's "Triple Deuce." The "Triple Deuce" prize will include two (2) round trip Delta Airline tickets to anywhere in the continental United States that Delta flies, two (2) nights lodging at a major hotel, and \$200 spending money.
  - And finally, the individual who accumulates the most points during the contest will be announced and receive a camcorder or a 27 inch color TV (approximate value \$1000).
  - Everyone who accumulates any points will receive an ACUTA coffee mug.
11. ACUTA may modify the rules to this contest at any time as deemed necessary.

### PROCEDURES

1. Recruiters (current members) should contact potential new members via telephone, Bitnet, fax etc.
2. Recruiters should request the ACUTA office send an application and general information to the potential new member who has been contacted. (Applications will not be sent to a recruiter for distribution.) New membership applications have been prepared and printed specifically for the contest.
3. ACUTA will document all calls from recruiters. Information will be maintained such as the date of call, the recruiter and the potential new member's name and address.
4. New members should return the completed application to the ACUTA office as soon as possible, but no later than June 1, 1992.
5. New member dues should be paid as soon as possible, but no later than June 25, 1992, in order to count toward the contest.
6. ACUTA will track applications and credit points to the respective recruiter.
7. ACUTA will have a membership recognition and awards night on Monday, July 27, 1992, at the 21st Annual Conference & Exposition in San Francisco at which time the drawings and awards will take place. Winners not present in San Francisco will be notified immediately after the conference.

## Membership contest

*(Continued from page 1)*

make the membership drive fun. As you can see by the contest rules (beginning on page 1 and continued at left) everyone has a chance to win some really exciting prizes," including a portable CD player, a VCR, a stereo system and the "Triple Deuce" top prize: two Delta Airline tickets good anywhere in the continental U.S. that Delta flies, two nights lodging at a major hotel and \$200 spending money.

In addition, the individual who accumulates the most points during the membership contest will receive a camcorder or TV valued at \$1,000.

"The more new members you bring in, the better your chances of winning a prize," Carnilla, Director of Telecommunications at The University of Chicago, pointed out. "This is going to be a really fun and rewarding membership recruitment contest! We're asking *everyone* to take an active role in recruiting new members and to encourage those members to get involved in our activities."

"Points" will be recorded at the ACUTA office for each new member or institution that signs up as a result of your efforts, and you will be assigned points based on members recruited. Each point is then worth one chance in the drawing for prizes. *Everyone* who accumulates any points will receive an ACUTA coffee mug.

"We have a lot to gain from this membership drive," Carnilla added. "If each of us does our best to recruit new members, and encourages them to become involved, ACUTA will gain - and so will each of us!" ↗



# Tucson seminars

*(Continued from page 1)*

As varied as the programs they serve, the technologies that Craft's presentation will cover include: fiber optics, compressed video, microwave, ITFS, satellite, low-power television, broadcast television, cable television, audio teleconferencing and computers.

Specific applications will include:

- A microwave system that allows a community college to serve a geographic area the size of New Hampshire, Vermont and Rhode Island combined;
- A 16 channel ITFS system shared by a university, a community college and the public schools;
- An ITFS system that serves 23 corporate sites, two public sites, and students in their homes via cable with live interactive programming;
- A fiber optic network that connects nine high schools for credit course distribution;
- A cable educational access channel used by a public school district for homebound teleteaching, for a homework hotline, and for interactive courses in Russian and English as a second language;
- Satellite delivery of instruction in elementary Spanish and library science, and
- Other programs serving both rural and metropolitan populations at a distance.

"Distance Learning" delivery systems will not be the only topic for ACUTA's Winter meeting. For the first time, two separate programs are being offered where before only one seminar was conducted. "Managing Telecom Resources" will be presented by Margaret K. Klenke, Vice President of TCS Management Group.

Attendees may register to attend only one of the seminars that will be held concurrently.

Klenke will update college telecom administrators on efficient and effective management of vital but often limited resources. As an instructor of Business Communi-

cations Review courses, Klenke quickly earned the status of "expert." Evaluations of her BCR presentations have averaged 9.8 on a scale of 10. As a project manager for her consulting clients, Klenke assists in the acquisition and management of telecom systems.

Telecommunications administrators on college campuses no longer are responsible for an "auxiliary" service. Electronic communications has become essential to distributing and assisting in higher learning. And as funding for education often fails to match increasing costs, college telecom administrators are called upon to make every dollar stretch even farther.

The Distance Learning seminar will be led by three veteran professionals who designed and now operate Missouri's distance learning system.

Coleman H. Burton, Executive Vice President of ACUTA, has been Director of Telecommunications for the University of Missouri since 1983. During his tenure, the system's four campuses have each installed new telecommunications networks. A digital network also connects the four with each other and to a state government network.

Burton served as consultant to North Dakota when that state planned the network that links its 10 public colleges and universi-

ties. He will be joined in the presentations by two Missouri colleagues - Dr. Ginny Pearson and Thomas E. Brenneman.

Pearson is Director of Media Programs at the University of Missouri at Rolla where she also teaches communications. For the past eight years she has been involved in the administration, research and development of satellite teleconferencing in higher education and business.

Brenneman, Associate Director/Chief Engineer for Video Network of the University of Missouri at Kansas City, has served as distance learning consultant to more than 10 colleges and universities. These include the University of Maine, Columbia University and Stanford University. He spent five years at Stanford as Chief Engineer for the university's Instructional Television Network.

Cost of attending one of the ACUTA seminars is \$350 for members and \$475 for non-members. Attendees may register for one seminar only. The Westin La Paloma will host the seminars. Lodging reservations must be made directly with the hotel (800) 222-1252 or (602) 742-6000.

For more information about the seminars, including registration, contact: Lisa M. Cheshire, ACUTA Membership Services Coordinator, Lexington Financial Center-Suite 2420, Lexington, KY 40507. Phone (606) 252-2882. ☺

## ACUTA InfoLine - (214) 994-9024

*(Continued from page 1)*

housed on the University of Texas-Dallas campus and provided at no charge to ACUTA by Direct Communications. The only expense to the Association is for two tie lines between the VMX system and the local exchange company.

Four categories of information are available by calling the InfoLine, with some broken down into sub-categories.

When the InfoLine answers, callers are given four choices:

Press 1 to hear general information about ACUTA, with options to hear about institutional and associate membership or Corporate Affiliation;

Press 2 for information on the next ACUTA meeting;

Press 3 for general information on ACUTA events, with options to hear the ACUTA calendar or hear exhibitor and sponsorship information.

Press 4 to hear an update on regulatory issues.

"ACUTA expresses its appreciation to Steve Lunsford, Direct Communication's Vice President for Operations, for making this complementary service available," said ACUTA Executive Director Del Combs.

"We hope members and prospective members find this new service convenient and helpful. We hope to expand and improve it in the future." ☺



# PBX operator must think ahead of fraud perpetrator

**By Sara Knaggs**

PBX owners are becoming increasingly aware of the risk of toll fraud. The same technology that allows PBX owners to offer easy access to their telecommunications services, can be used for unauthorized access to the same facilities.

For example, direct inward system access (DISA) is a useful tool for those who travel, or for some other reason must make institution-related long distance calls from off campus. However, DISA lines without proper protection can be accessed by hackers who are able to discover valid authorization codes. DISA and other PBX violations can account for losses that quickly run to significant amounts. PBX owners must be vigilant in their review and analysis of calling activity, and must take action to protect themselves from fraud.

People who commit PBX fraud are very creative and highly motivated. It's worth their effort to break into your system. Whether they be selling illegal long distance calls through your PBX, engaging in drug deals or just enjoying personal calling at your expense, PBX fraud results in direct costs to the PBX owner.

Unauthorized access to PBX out-dial capabilities is relatively easy to obtain. For example, people who commit PBX fraud may:

- Sort through the trash for code numbers;
- Scout around office areas for reminder notes (little yellow sticky notes) with code numbers;
- Gain access to the PBX database and change class of service restrictions - then change them back when they are done;
- Observe digits dialed by callers at public pay phones, such as in airports, and then use the caller's authorization code, and
- Dial and dial and dial . . .

frequently using computer-generated random dialing in an attempt to find a combination of digits that work.

Detection and prevention are difficult. The best way to limit losses involves anticipating the attempt, frustrating the perpetrator, monitoring for unusual activity and taking immediate action if abuse is suspected.

## **Anticipating the Attempt/ Frustrating the Perpetrator**

Anticipating how someone might gain unauthorized access leads directly to developing means of frustrating the perpetrator. You might expect PBX abuse to come through:

- Unauthorized use of DISA trunks authorization code discovery/misuse;
- PBX database manipulation, and
- Accessing out-dial capabilities through voice mail.

Unauthorized DISA can be prevented by eliminating such service from your system. If eliminating DISA is not an option, then the following steps may help protect your valuable PBX resources:

- Use a non-published number for DISA access. Some PBXs let you require system, group and individual authorization codes before a call can be processed.
- Use as many authorization code levels as possible, and make each code as long as possible.
- Remind users that they are personally responsible for calls associated with their authorization codes!
- Then, consider a new device that generates a pseudo-random DISA authorization code for each authorized user, every minute. This credit-card size device can be a significant barrier to DISA abuse as it will not permit multiple uses of the same authorization code.

• Authorization codes for on-campus, off-net calling should also be as long as possible.

• All authorization codes should be random numbers, not associated with a student or employee number or other, recognizable pattern.

• Consider authorization codes of different lengths.

• Verify the authorization after all digits are dialed and don't prompt for authorization code input.

These precautions make it harder for the hacker to determine when a code is needed, or what constitutes a valid code sequence. When a call fails, the hacker won't know whether the code or the destination digits were invalid.

Other precautions involving authorization codes include time-of-day, day-of-week and day-of-year authorization code requirements. For example, daytime calls from an office might be permitted with no authorization code, while during evening and weekend hours a station-specific authorization code is invoked. Also, limit the use of roving or universal authorization codes. Then, delete inactive authorization codes immediately:

- As soon as an employment is terminated;
- As soon as a student's long distance credit limit is reached;
- As soon as the dorm room is vacated at term end.

## **Preventing Other Unauthorized Access**

Many PBXs offer remote maintenance for which the vendor calls into your PBX maintenance port on a regular basis to evaluate operational status or to assist in problem resolution.

Unauthorized personnel can also access your PBX database the same way, once they learn the correct number to dial. While

*(Please continue on next page)*

## PBX fraud prevention

*(Continued from previous page)*

passwords offer some level of protection, more effective control can be attained by either disconnecting the modem when legitimate inbound calls are not expected, or by implementing a call back protection scheme. Some PBXs, like some computer programs, recognize the incoming call, disconnect immediately, and outcall to a predetermined set of numbers. This effectively bars unauthorized callers from accessing the PBX database, changing restriction levels, making calls, and then resetting the parameters when they are done.

Still another means of illegal entry to the PBX involves voice mail. Callers are routed to a voice mail box, from which they request an automated transfer to an extension, thus gaining access to any outdial capabilities for which that station is authorized. Limit this access route by deleting any prompts for transferring to an extension. Also limit any voice mail outdial capabilities to prevent users from reaching dial tone and making long distance calls.

While some PBX fraud involves serious criminal activity, minor violations can add up to large dollar amounts. An individual student, for example, might place their extension in call-forward to a long distance destination during term break. Then, any local call to the dorm room would be forwarded to the student at their home or vacation location, with the school receiving the bill. Prevent this type of abuse by blocking external call forwarding.

Access to PBX outdial capabilities is limited only by the imaginations of those who are trying to gain illegal access. The variety and ever-changing nature of the access methods should not cause you to delay in implementing any preventive measures you can think of today. You can always

move to additional and more sophisticated techniques. Leaving the PBX exposed is foolhardy.

### Monitoring for Unusual Activity/Taking Action

Monitoring traffic is critical to the success of any fraud prevention program. The key is to limit your losses. Several telemanagement packages offer exception reports that let you identify which stations and/or authorization codes are making excessive numbers of calls, calls of excessive length or calls to unusual destinations. Schools with typically local (in-state or regional) students should be alerted to calls to other geographic locations. Similarly, schools with small international student populations should be looking for overseas calling.

Unanticipated fluctuations in trunk activity can be a signal that fraud is taking place. Telecom personnel should know approximate routine usage levels so that increases can be spotted before abuse becomes excessive. Trunk group configuration, class of service and other database variables, may be manipulated to increase your level of protection. For example, when you implement 10-XXX dialing, prohibit +1 while

permitting +0. And don't forget to block 10-XXX-011+0 to prevent international, operator assisted calls. Although the carriers may provide call screening and may refuse to charge calls back to the PBX trunk, they are not currently required to.

The ultimate responsibility for PBX security rests with the telecom department's administrative staff.

### Summary

To be successful, PBX manufacturers must provide the flexibility and user friendly features today's users require. Vendors must also provide a set of tools that can be used, with some common sense, to minimize the risk of PBX abuse and toll fraud.

These tools include authorization codes, class of service restrictions, passwords, dial-back security and others.

Assuming that the appropriate tools are made available, responsibility for using them rests with the customer.

PBX abuse is prevalent and on the increase. You, as the telecom manager, must take appropriate action to protect your valuable resources. ↵

**(Sara Knaggs is Education Programs Director for InteCom Inc.)**

## ACUTA Calendar

- **Winter Seminar •**  
**Tucson, AZ**  
Jan. 8-11, 1992

HOTEL: The Westin La Paloma

TOPICS: (separate, concurrent programs)

- Managing Telecom Resources
- Distance Learning/Teleconferencing: Technology and Applications

- **Spring Seminar •**  
**Lexington, KY**  
April 26-29, 1992

HOTEL: Radisson Plaza

TOPIC: Data Communications

- **21st Annual Conference •**  
**San Francisco**  
July 26-30, 1992

HOTEL: The Hilton on Hilton Square

TOPICS: Management, Regulatory Issues; Professional Growth, Voice, Data and Video, User Groups, Regional Meetings

- **Fall Seminar •**  
**Hilton Head, SC**  
Nov. 1-4, 1992

HOTEL: Hyatt Regency

TOPIC: Disaster Planning

# MOREnet links 12 campuses, state government

**By Coleman H. Burton**  
*ACUTA Executive Vice President*  
 Univ. of Missouri

In a unique collaborative effort between the University of Missouri, eight regional Universities and the state of Missouri's Division of Data Processing and Telecommunications, a state-wide data network linking all public, four-year institutions within the state has been in operation since last summer. Using a network based upon the Transmission Control Program/Internet Protocol (TCP/IP), local area networks and mainframe computers on the four Univ. of Missouri campuses and the campuses of the eight regional Universities are connected in a single unified network. A T1 connection to the National Science Foundation's Internet provides access to world-wide facilities and resources from almost every terminal, work station and micro-computer on each of the twelve campuses.

Members of the MOREnet consortium include the Univ. of Missouri campuses in Columbia, Kansas City, Rolla and St. Louis, and Central Missouri State Univ.,

Lincoln Univ., Missouri Southern State College, Missouri Western State College, Northeast Missouri State Univ., Northwest Missouri State Univ., Southeast Missouri State Univ. and Southwest Missouri State Univ.

The Univ. of Missouri's inter-campus digital network and the state of Missouri's Integrated Voice Data Network (IVDN) are the communication resources that enabled MOREnet to be physically created.

Both networks use T1 multiplexers to combine voice and data circuits for transmission over dedicated T1 facilities. The University's network has four nodes, serving the four campuses, and the State's network has eleven nodes serving major population centers of the state. The University's network is based upon Timeplex LINK/2 multiplexers and the State's network is based upon NET IDNX 20 and 70 multiplexers. A node from each network is co-located on the Univ. of Missouri-Columbia campus, the bridge which joins the two networks. The T1 circuits that form the backbone of the networks are provided by several carriers, including AT&T, General Telephone, Southwestern Bell, United Telephone and Williams Telecommunications Group (WTG).

Each of the twelve campuses has a cisco™ router located on-site. The routers support Ethernet, token ring and AppleTalk LAN protocols. The routers on eleven of the campuses connect to one of two cisco routers on the UM-Columbia campus through 56,000

bps data circuits provided by either the university or state network (in truth, the Rolla and St. Louis connections are 96,000 bps). The Columbia cisco routers connect via Ethernet to a Protean router, which functions as the gateway to the NSF Internet. Besides the variety of LAN connections, MOREnet is also supporting IBM, DEC, HP and Burroughs mainframes.

Primary uses of MOREnet are electronic mail, both intra-network and world-wide via Internet, data-base access and file transfers. The network also supports remote log-ons to a variety of mainframe resources, including super computers and systems around the world. The on-line library catalogs of MOREnet member institutions are popular and heavily used.

Funding for purchase of the routers and transmission costs for the first two years has been provided by a National Science Foundation grant. MOREnet member institutions also pay annual dues, based

upon institution size, that support a network operations center (NOC) and a network information center (NIC).

The NOC is primarily concerned with the "care and

feeding" of the network, i.e., day-to-day monitoring and trouble shooting of the physical network. The NOC is also responsible for naming conventions and name assignments within the network.

The NIC is a value added service. It works with the member institutions to identify areas where MOREnet can be incorporated into the basic missions of teaching, research and service. Such help might include helping a faculty member apply for a grant of super computer time to be used for class projects, or helping a faculty member in locating data-base resources that can be used to provide the latest information on a particular research topic. One of the greatest, yet unquantifiable, benefits is the interaction, via electronic mail, of students at the different institutions.

Future plans include extending the network to private colleges and universities, community colleges and some secondary schools within the state. An exciting prospect is the possible interaction of classes in secondary schools around the state, working cooperatively on a state-wide project.

MOREnet brought together three groups, the Univ. of Missouri, the state Universities and a division of state government, which do not routinely work together. We are very proud of what we have accomplished so far and are excited about what the future holds. We are equally excited about MOREnet as positive evidence of the benefits of cooperation and collaboration, and as a model for future undertakings, such as a state-wide interactive video network. ↗

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**Future plans include extending the network to private colleges and universities; community junior colleges and some secondary schools.**

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## From ACUTA Headquarters

Del Combs  
Executive Director

### Changes in the Office

As your technology continues to expand and provide alternatives (and create questions), the ACUTA staff must also keep in step to provide much of this information – or at least access to this information – for your decision-making process.

Accordingly, the ACUTA staff will soon grow from five to six, thanks to the approval of the Board of Directors on the last Board conference call.

All current positions will be affected to some degree due to the shifting of some responsibilities, matching personal skills with job functions and initiating some new member services.

Next month's issue of ACUTA News will continue the focus on one of the staff positions to enlighten the membership of our responsibilities, skills and duties here in the office that you don't see at ACUTA events.

But to orient you briefly on the changes, Lisa McLemore (who has become Lisa M. Cheshire since her Oct. 19 wedding) will assume the position of "Meeting Planner" and be responsible for planning and coordinating all these func-

tions that are currently divided among several staff members and myself. She will be acquiring some new skills through outside professional organizations and will "have answers and status" of a multitude of actions involving hotel and event suppliers to improve the productivity and effectiveness of our seasonal events.

This will be a lateral transfer to basically a new position that consolidates a number of responsibilities and actions for better coordination within the office, direct logistical support for the Board and committees and a single source to work with outside hospitality vendors for our events.

Kellie Bowman will also make a lateral transfer to assume the position of "Membership Services Coordinator" and also assume some additional responsibilities in the publications and editing arena to make use of her computer software skills.

The current "Staff and Events Coordinator" position that Kellie has held has been changed to "Telecommunications Resources Manager" with significant emphasis on telecommunications support and information to the general membership. Professional skills in telecommunications management in higher education and vendor products and services are required. (Please see position description on page 12.)

This will be the initial step in establishing a pool of information such as position descriptions, generic RFPs, consulting services and a general expansion of the information provided in our Membership Directory this year that can be tabulated, categorized, etc., and become a resource available to our members.

We get daily requests for assistance of this nature, and in the future we will be able to provide such information. This will not be a person who will "solve your problems for you," but will be able to discuss some alternatives and provide information to assist you in your every-day management

concerns. Also, I anticipate more quality and technical coordination with exhibitors and sponsors which our event attendees will benefit from.

Collecting, categorizing, etc., of this information will not take place overnight but will be a lengthy process. However, I promise to start very quickly after the first of the year. One of the keys to how soon we can help you will be your response to providing us with information. This past year that has been excellent.

### Membership Drive

The membership drive kicked off this month and there's plenty of reasons for everyone to be excited.

The opportunity to win prizes, create more opportunities for networking and just plain old pride in contributing to the Association's growth should encourage everyone to pick up the phone and be resourceful. If you don't know the names or phone numbers of any schools, just borrow a copy of the *Higher Education Directory* which lists all institutions alphabetically by state. Your library should have several copies.

.....  
**Just remember that the long-term investment and primary objective is to gain new institutional members. The more institutions in higher education that we represent, the more clout ACUTA has in dealing with regulatory and legislative affairs, the more visibility and importance to industry suppliers and the more credibility with other major telecommunications associations.**  
.....

So, let's all pull together and make this year's drive and contest a win/win/win situation for our "recruiters," new institutional members and the association.

This is the first 12th issue of the ACUTA News to be published. In the past, ACUTA has never published more than 11 issues in one year. Consider this December edition part of our holiday greetings to you. You can look forward to 12 issues annually in the future. ☺



Association of College & University  
Telecommunications Administrators  
Lexington Financial Center, Suite 2420  
Lexington, KY 40507-1739

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## Positions Available

### Telecommunications Resources Manager

#### ACUTA Office - Lexington, KY

**General:** The individual reports to the Executive Director. The position is responsible for the coordination of the exhibit and sponsorship program and for maintaining an on-going telecommunications dialogue with vendors in promoting the cooperative venture between higher education and the industry for the benefit of both parties. The position is responsible for establishing and maintaining telecom resources and services and to provide or

make available that information to ACUTA members. Acts as vendor liaison for promoting higher education's visibility in industry.

**Some Significant Responsibilities and Duties are:** Actively promote ACUTA's seminar and conference subjects to industry with significant depth of knowledge to establish a strong professional relationship between ACUTA and industry in supporting higher education. Coordinate and schedule vendor participation as exhibitors and sponsors at ACUTA events. Solicit from members information to establish a library of telecommunications material on position descriptions, request for proposals for various types of services, PBXs, information and/or experiences of telecommunications applications, software analysis references for consultants, etc. Prepare and provide informational resources for ACUTA members from the newly acquired resources.

**Minimum Qualifications:** Prior experience in telecom management or related field; bachelor's degree in telecom or administrative field preferred; considerable knowledge of vendor products/services; five years exp. or acceptable combination of training/job experience required; higher education exp. preferred; good personal and telephone communications skills; team worker with knowledge, training, temperament to adapt and perform variety of admin. functions with min. supervision; basic experience/training to use computer equipment (prefer Macintosh exp.) and peripheral equipment.

Resumes will be accepted until Jan. 3, 1992. The position is to be filled by February if qualified applicants are available.

To apply: send resume or vitae and cover letter to Del Combs, Executive Director, ACUTA, Lexington Financial Center, Suite 2420, Lexington, KY 40507.

## Director, Technical Services

### Ithaca College Office of Info Tech

**Responsibilities:** The Office of Info Tech (OIT) provides computing/communications services to 1,300 faculty/staff, 6,400 students. Currently operates Unisys mainframe for admin computing. Plan to migrate applications to Digital Equipment VAX cluster over next few years. Several VAX computers already used for admin development, office automation, central academic computing. OIT provides data communications services through variety of media including extended ethernet LAN; provides phone service through AT&T System 85. Dir. of Tech. Services reports to Director of OIT, responsible for data communications and networks, telephone service, systems programming support for both Unisys and VAX; manages staff of 7.

**Requirements:** Bachelors degree, several years of progressive mgt. exp. in computing/communications; supervisory experience required; exp in academic environment preferred. Demonstrated in-depth knowledge of computers/data communications; working knowledge of state-of-the-art telephone systems/services. Strong interpersonal skills, ability to communicate verbally/in writing essential.

Available immediately. Applications received after Dec. 13 may not be considered. Send cover letter, salary requirements, resume to: Director, Office of Info Tech, Ithaca College, Ithaca, NY 14850.

## ACUTA Welcomes New Members

The following joined ACUTA between Oct. 26 and Nov. 21.

#### Region 1, Northeast

James R. Earl - Perkins School for the Blind (MA)  
John S. Meickle - Yale University  
Maj. Miguel A. Mendoza III - U.S. Military Academy, West Point  
Clifford Rudd - St. Joseph's University (PA)

#### Region 2, Southeast

Francis Kay - Georgetown University  
Kimberly L. Sparks - North Carolina Wesleyan College

#### Region 3, Midwest

Dyle Koch - Ambassador College (TX)

#### Region 4, West

William Gilson - College of Eastern Utah  
Jane Ryon Tederman - Univ. of Portland

## Corporate Affiliates

#### BRONZE

GTE Applied Campus Technology

#### COPPER

Telecom Concepts  
Bell Atlantic of Philadelphia

## ACUTA FAX

(606) 252-5673

The Change of Information form on page 109 of the new 1991-92 ACUTA Membership Directory incorrectly lists the ACUTA office phone number instead of the fax number, shown above. Please write in the correct number for future use.

## Bid samples sought

Sharon Harris, Telecom Representative for the University of Missouri, Rolla, would like to hear from ACUTA members who have experience with requesting and advertising for competitive bids for provision of university long distance and cable television service.

She can be reached at Univ. of Missouri, Rolla, 121 Gen. Services Bldg., Rolla, MO 65401, Phone (314) 341-6999, Fax (314) 341-4048, Bitnet: C3197SKH@UMRVMB.